

Remarks

Reconsideration is requested in view of the above amendments and the following remarks. Claims 16, 24-26, 33-45, 47 and 50 have been canceled without prejudice or disclaimer. Claims 1, 11-14, 17-23, 27, 29-32 and 46 are amended. Claims 1-15, 17-23, 27-32, 46, 48, and 49 are pending.

Claim 1 is amended to recite an electrical gas discharge light delivery apparatus. The changes are supported by the original disclosure, for example page 4, lines 21-24 and claim 16. Claim 16 is canceled as a result of the amendments to claim 1.

Claims 11-14, 17 and 18 are amended to use language consistent with claim 1. Claim 17 is also amended to depend from claim 1 rather than claim 16.

Claim 19 is amended to recite an electrical gas discharge light delivery apparatus. The changes are supported by the original disclosure, for example page 4, lines 21-24 and claim 26. Claim 26 and 33-44 are canceled as a result of the amendments to claim 19.

Claims 20-23, 27, and 29-32 are amended to use language consistent with claim 19. Claim 27 is also amended to change the dependency thereof. In addition, claims 29-31 are amended to depend from either claim 19 or claim 20, rather than claim 26.

Claims 24, 25, 45, 47 and 50 have been canceled to expedite prosecution.

Claim 46 has been amended to recite the laminated panel, the frit layer on the second layer of the laminated panel, the use of pulsed light, and a light energy delivery mechanism. The changes are supported by the original disclosure, for example page 2, lines 24-25, page 8, lines 27-32, and page 9, lines 1-3.

Applicants reserve the right to pursue one or more of the canceled claims in a later filed application.

Turning now to the office action, claims 1-7, 10-32 and 48 are provisionally rejected under 35 USC 101 as claiming the same invention as that of claims 1-10, 13-18, 21-25, 30-34, 38-41 and 45-46 of copending application 09/346,375.

Applicants respectfully traverse this rejection. Applicants disagree with this rejection and respectfully request that the Examiner reconsider the rejection in light of the amendments made

to the claims herein and to the claims in 09/346,375. However, Applicants have withheld any detailed comments, arguments and papers which will otherwise overcome this rejection until the claims have been found otherwise patentable.

The Examiner has also rejected claims 1-50 under 35 USC § 103(a) as being unpatentable over Burkart et al. (Canada 2,073,092) in view of Gofuku et al. (US 5,269,868). Applicants respectfully traverse this rejection.

Independent claims 1, 19, 48 and 49 recite, among other features, either a method that uses, or an apparatus that includes, either an electrical gas discharge light energy delivery apparatus (claims 1 and 19) or an electric gas discharge tube (claims 48 and 49).

As disclosed, the use of an electrical gas discharge light delivery apparatus or electric gas discharge tube, as opposed to other light, such as laser light, ensures that the energy attenuates significantly with distance from the apparatus (see, for example, page 12, lines 1-2). Therefore, the energy is sufficient to achieve de-bonding of the panel, but there is less risk in accidentally (or as a result of misuse) harming an operator or damaging structure that underlies the panel, for example the interior trim of a vehicle (see, for example, page 12, lines 3-6).

Burkart et al. teaches a releasable joint between two elements. The joint includes at least one adhesive bead and a heatable separating member that is heated to effect release of the joint. Burkart et al. discloses heating the member using electric energy, high frequency, micro wave or infrared radiation (page 11, lines 1-12).

However, Burkart et al. does not teach or suggest the use of an electrical gas discharge light delivery apparatus or electric gas discharge tube. Nor does Burkart et al. suggest the advantages that arise therefrom.

Gofuku et al. teaches a method of separating bonded substrates that are used in a liquid crystal display device. The substrates includes first and second glass sheets 1, 2 and an adhesive 5 between the sheets. A laser beam 8 is used to heat the adhesive 5 to permit release of the sheets.

Gofuku et al. does not teach or suggest the use of an electrical gas discharge light delivery apparatus or electric gas discharge tube. Nor does Gofuku et al. suggest the advantages that arise therefrom.

Therefore, Burkart et al. and Gofuku et al. do not render claim 1 unpatentable, because, even if combined, the claimed invention does not result. The combined teachings of the references fail to teach an electrical gas discharge light delivery apparatus or electric gas discharge tube.

Claims 2-18, 20-23, and 27-32 depend from claims 1 and 19 and are patentable for that reason alone and need not be separately distinguished at this time.

With respect to claim 46, this claim recites a method of releasing a laminated windscreen panel from a frame. The panel includes first and second layers that are transparent to wavelengths in the visible range of the spectrum and an interlayer between the first and second layers. The second layer includes a frit layer on an inside face thereof. The method includes directing pulsed light output from a light delivery mechanism at the frit layer, providing the pulsed light at a wavelength absorbed by the frit layer, and moving the light output along a path of the frit layer at a predetermined rate to carbonize the frit layer to effect release of the panel from the frame.

Burkart et al. and Gofuku et al. are discussed in more detail above, and a detailed discussion will not be repeated here. In short, Burkart et al. does not teach a frit layer, the use of pulsed light that is at a wavelength that is absorbed by the frit layer, and the carbonization of the frit layer. Likewise, Gofuku et al. does not teach a frit layer, the use of pulsed light that is at a wavelength that is absorbed by the frit layer, and the carbonization of the frit layer. Because these features are not taught individually by the references, the features are not suggested by a combination of the references.

For at least the reasons discussed above, the claims are patentable over Burkart et al. and Gofuku et al. Withdrawal of the rejection is requested.

Favorable reconsideration is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request favorable action on this matter. If a telephone conference would be helpful in resolving any remaining issue in this application, the Examiner is invited to contact the undersigned by telephone at the number provided below.

Respectfully submitted,

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S/N 09/184,186

PATENTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	CLEMENT et al.	Examiner:	M. ELVE
Serial No.:	09/184,186	Group Art Unit:	1725
Filed:	November 2, 1998	Docket No.:	7500.377US11
Title:	RELEASING OF GLAZING PANELS		

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Marked-up Copy Showing Changes MadeIn the Claims

Please cancel claims 16, 24-26, 33-45, 47 and 50 without prejudice or disclaimer.

Please amend claims 1, 11-14, 17-23, 27, 29-32, and 46 as follows.

1. (Amended) A method of releasing a glazing panel from a frame to which the panel is bonded by interposed bonding material, the method comprising:

- i) arranging [light energy delivery means] an electrical gas discharge light delivery apparatus adjacent the glazing panel; and,
- ii) operating the [light energy delivery means] electrical gas discharge light delivery apparatus to transmit light energy through the [screen] panel to effect release of the panel from the frame.

11. (Amended) A method according to claim 5, wherein a single pulse of light energy delivered is of sufficient energy to effect separation of the [screen] panel from the frame along a length of the bonding material.

12. (Amended) A method according to claim 1, wherein the [light energy delivery means] electrical gas discharge light delivery apparatus is hand held and positionable relative to the glazing panel manually by an operator.

13. (Twice Amended) A method according to claim 1, wherein the light energy attenuates rapidly with distance such that at a few centimeters from the [energy delivery means] electrical gas discharge light delivery apparatus the light energy density is significantly diminished from its maximum value.

14. (Amended) A method according to claim 13, wherein at a distance substantially in the range 5cm or less from the [delivery means] electrical gas discharge light delivery apparatus the light energy density is 50% of its maximum value[,] or below.

17. (Twice Amended) A method according to claim [16] 1, wherein operation of the electrical gas discharge light delivery apparatus is controlled to limit either one of the pulse rate or duration of the light pulse.

18. (Amended) A method according to claim 17, wherein the operation of the electrical gas discharge light delivery apparatus is controlled by:

- i) charging a capacitor arrangement;
- ii) initiating a trigger pulse to discharge the capacitor arrangement; and
- iii) discharging the capacitor arrangement through an inductor to the gas discharge apparatus.

19. (Amended) Apparatus for releasing a glazing panel from a frame to which the panel is bonded by interposed bonding material, the apparatus comprising [light energy delivery means] an electrical gas discharge light delivery apparatus arrangeable adjacent the glazing

panel, and operable to transmit light energy through the [screen] panel to effect release of the panel from the frame.

20. (Amended) Apparatus according to claim 19, [which] wherein the electrical gas discharge light delivery apparatus is controllable to pulse the light energy delivered.

21. (Twice Amended) Apparatus according to claim 20, wherein the electrical gas discharge light delivery apparatus is controllable to either one of adjust or limit at least one of:
the pulse repetition rate of the light energy delivered;
the pulse duration of the light energy delivered; and
the light energy intensity delivered.

22. (Amended) Apparatus according to claim 19, wherein the [light energy delivery means] electrical gas discharge light delivery apparatus includes a manual trigger for initiating a light energy pulse [when the delivery head is positioned to the operator's satisfaction].

23. (Amended) Apparatus according to claim 19, wherein means is provided for selectively adjusting the intensity of the light energy delivered.

27. (Amended) Apparatus according to claim [25] 19, [including a] wherein the electrical gas discharge light delivery apparatus includes a pulse forming network having a capacitor and inductor arrangement in which the capacitor discharges through the inductor to drive the electrical gas discharge light delivery apparatus to produce a light pulse.

29. (Amended) Apparatus according to claim [26] 20, including control means for controlling [one or more apparatus parameters including] the minimum permissible time elapsing between subsequent discharge pulses of the electrical gas discharge light delivery apparatus.

30. (Amended) Apparatus according to claim [26] 19, wherein the electrical gas discharge light delivery apparatus comprises an electrical gas discharge tube.

31. (Amended) Apparatus according to claim [26] 19, wherein the electrical gas discharge light delivery apparatus comprises a reflector arranged to direct emitted light in a predetermined direction.

32. (Amended) Apparatus according to claim 19, wherein the electrical gas discharge light delivery apparatus comprises a window through which emitted light is directed to pass through the glazing panel.

46. (Amended) A method of releasing a windscreen panel from a frame to which the windscreen panel is bonded by interposed bonding material, the panel including first and second layers that are transparent to wavelengths in the visible range of the spectrum and an interlayer between the first and second layers, the second layer including a frit layer on an inside face thereof, the method comprising the steps of:

directing pulsed light output from a [laser source] light energy delivery mechanism at [a] the frit layer on [an] the inside face of the second layer of the windscreen panel [about a periphery thereof and conforming to the frame];

providing the pulsed light output at a wavelength absorbed by the frit layer; and

moving the light output along a path of the frit layer at a predetermined rate to carbonize the frit layer to effect release of the windscreen panel from the frame.